



INSTALLATION



MAINTENANCE

Solar Energy for Eye Care

Summary

Country	Cameroon
Implementer	Africa Eye Foundation
Target groups	Patients
Duration	07/2020 – 03/2021
Type of energy use	Electrification

Challenge

The Magrabi ICO Cameroon Eye Institute (MICEI) in Cameroon is sub-Saharan Africa's first non-profit ophthalmology institute. Launched in 2017, the institute is located 20 kilometres north of Cameroon's capital, Yaoundé. According to MICEI, the institute has provided over 100,000 consultations and over 5,000 (subsidised) eye surgeries, since its launch. For these treatments, the institute needs a secure energy supply as well as an overall reduction in energy costs, as both will lead to more resources available to the institute to reach a greater amount of people. Presently, MICEI's power supply principally relies on the national electricity network, provided by a hydroelectric dam, situated some 350 km from the site. The energy supply has proved to be unreliable since MICEI is situated in a rural community with power rationing as part of load sharing. As the national electricity grid is prone to power cuts and breakdowns, the institute also operates an emergency generator. The electricity costs are high and exceeded €72,000 between August 2016 and September 2018.

Impact Logic

The MICEI Solar Energy for Eye Care project is implemented in several steps. The first step is an environmental impact assessment, followed by the design of the required photovoltaic system and the establishment of a project team. The staff responsible for operation and maintenance is trained accordingly. The photovoltaic system provides electricity for interior lighting, street

lighting and power for the Institute's operations, as stipulated by the project plan. As a back-up – for example in times of monsoon – the MICEI can fall back on the national power grid. Through an improved and climate friendly clean energy supply MICEI can save costs, operate more effectively, and extend the provision of health services.

Innovative Project Element

In Cameroon the demand for electric energy far outstrips the available supply. Furthermore, transportation from the source of production to the final consumer has been very challenging (due to power loss and variations). So far, there is very little engagement in seeking solar energy supply. MICEI seems to be the first health institution to have the facility equipment powered by solar energy in Cameroon, and the first non-profit eye hospital in Africa. The solar system is based on three autonomous modules, corresponding to three components: internal lightning, street lights and machines. The modular design approach of these components has two key advantages. The first advantage is flexibility in implementation, the second is efficiency in maintenance. The modular design facilitates maintenance since a fault in one subsystem does not affect the other subsystems. At the same time the system has the possibility to switch back to the national power grid. This allows the existing power supply to be used as backup to the solar system and it provides continuity of service in the event of a fault in the solar system.

FURTHER INFORMATION

www.gruene-buergerenergie.org

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